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(54) **PHOTOVOLTAIC POWER GENERATION SYSTEM FREE OF BYPASS DIODES**

(75) Inventors: **Anthony L. Lentine**, Albuquerque, NM (US); **Murat Okandan**, Edgewood, NM (US); **Gregory N. Nielson**, Albuquerque, NM (US)

(73) Assignee: **Sandia Corporation**, Albuquerque, NM (US)

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(58) **Field of Classification Search**
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See application file for complete search history.

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Primary Examiner — Robert Deberadinis
(74) *Attorney, Agent, or Firm* — Martin I. Finston

(57) **ABSTRACT**

A photovoltaic power generation system that includes a solar panel that is free of bypass diodes is described herein. The solar panel includes a plurality of photovoltaic sub-modules, wherein at least two of photovoltaic sub-modules in the plurality of photovoltaic sub-modules are electrically connected in parallel. A photovoltaic sub-module includes a plurality of groups of electrically connected photovoltaic cells, wherein at least two of the groups are electrically connected in series. A photovoltaic group includes a plurality of strings of photovoltaic cells, wherein a string of photovoltaic cells comprises a plurality of photovoltaic cells electrically connected in series. The strings of photovoltaic cells are electrically connected in parallel, and the photovoltaic cells are micro-system-enabled photovoltaic cells.

16 Claims, 6 Drawing Sheets